CLAIMS

1. (Currently amended) A message system for delivering data in the form messages between message clients;

the message system being configured to receive messages from message producing clients and to forward messages to message consuming clients;

the message system comprising a server cluster containing a group of client manager nodes, said group of client manager nodes comprising a plurality of client manager nodes;

each client manager node of said group of client manager nodes comprising means for connecting to clients, means for managing client connections and means for forwarding messages received from message producing clients to message manager nodes, and means for forwarding messages received from message manager nodes to message consuming clients;

the server cluster further containing a group of message manager nodes being configured differently from the client manager nodes, said group of message manager nodes comprising a plurality of message manager nodes;

each message manager node comprising means for storing and distributing messages, said messages comprising a destination information addressing a destination, said destination being at least one of a queue and a topic;

the system further comprising communication channel means for providing a multicast communication channel for forwarding messages between said ~~at least one~~ group of client manager nodes and said ~~at least one~~ group of message manager nodes.

2. (Currently amended) The message system of claim 1 ~~comprising~~:

~~a plurality of message manager nodes in said group of message manager nodes,~~

said message manager nodes being configured to comprise destinations, said destinations being at least one of a queue and a topic;

~~said system further comprising a plurality of client manager nodes,~~

each client manager node comprising computer program code means for sending message data across said multicast communication channel,

said message data containing a destination information and not containing an individual address of a message manager node,

each message manager node comprising computer program code means for receiving message data comprising destination information matching a destination of the message manager, and for maintaining said destination being at least one of a queue and a topic.

3. (Previously presented) The message system of claim 2 where each message manager node further comprises data storage means for storing message data in at least one of a queue and a topic and comprises means for sending message data, depending on the content of a request signal.

4. (Previously presented) The message system of claim 1 where the number of the client manager nodes of said group of client manager nodes is independent from the number of the message manager nodes of said group of message managers.

5. (Previously presented) The message system of claim 1 in which not all possible pairs of nodes in the server cluster are required to exchange data directly.

6. (Previously presented) The message system of claim 1, in which a reliable multicast communications protocol is used for inter-node data transfer, in which a plurality of message manager nodes is provided, wherein at least two message manager nodes are configured to contain identical destinations to maintain one or more identical, redundant copies of stored data received in the same

multicast transmission from a client manager as the original copy of stored data.

7. (Currently amended) A method for delivering data in the form messages between message clients using a server cluster comprising the steps of:

providing a group of client managers of said server cluster, said group of client managers comprising a plurality of client manager nodes;

providing a group of message managers of said server cluster, said group of message managers comprising a plurality of message managers having at least one destination, said destination being at last one of a queue and a topic;

connecting a message client to a client manager node of said group of client managers of said server cluster;

transmitting a message from said message client to said client manager node;

depending on the content of said message, sending message data by said client manager across at least one multicast communication channel connected to said client manager, said message data comprising a destination information addressing a destination; and

receiving said message data by all message managers having said destination addressed by said destination information and storing said message data on data storage means of said message managers.

8. (Previously presented) The method of claim 7, further comprising the steps of:

depending on a list of client subscriptions of said message manager, sending message data comprising a client information from one message manager across said at least one multicast communication channel;

receiving said message data by the client manager addressed by said client information; and

transmitting, depending on the content of said message data, a message to the message client addressed by said client information by said client manager.

9. (Previously presented) The method of claim 8 wherein in said group of message managers primary message managers and backup message managers are provided, each backup message manager containing the same destinations as one associated primary message manager and controlling regularly whether said associated primary message manager functions, wherein each backup manager monitors the multicast communication on said multicast communication channel and stores the same message data as said associated primary message manager, and wherein each backup manager does not send any message data unless said associated primary message manager fails to function.

10. (Currently amended) The method of claim 9 where each backup message manager is associated a channel rank and where upon failure of a primary message manager, the associated backup message manager having the lowest or highest channel rank changes its status and becomes a primary message manager.

11. (Previously presented) The method of claim 7, wherein, if the message size exceeds a maximum message size value, said message to be transmitted between said message client and said message manager is fragmented by the message manager or by the message client and sent as a separate command.

12. (Previously presented) The method of claim 1, wherein at least two multicast communication channels are present, and wherein either every client manager node is connected to all of said multicast communication channels and every message manager node is connected to only one of said multicast communication channels or every message manager node is connected to all of said multicast communication channels and every client manager node is connected to only one of said multicast communication channels.

13. (Currently amended) A ~~computer program product~~computer-readable medium ~~comprising a computer usable medium~~ having computer readable program code means embodied therein for

enabling a computer to serve as a client manager in a server cluster, the ~~program product~~computer-readable medium comprising computer readable code means for enabling the computer:

to establish a connection to a message client;

to communicate with at least one of a plurality of message manager node~~s~~ comprising means for storing messages and at least one destination across a multicast communication channel, said destination being at least one of a queue and a topic;

to receive a message from said message client, and

depending on the content of said message, to transmit message data across said multicast communication to at least one of said message manager nodes, said message comprising a destination information addressing a destination,

further comprising computer readable code means for enabling the computer:

to receive message data containing a client information from a message manager node, and

to transmit, depending on the content of said message data, a message to the message client addressed by said message data.

14. (Previously presented) The ~~computer program product~~computer-readable medium of claim 13, wherein said computer readable code means for enabling the computer to establish a connection to a message client comprise means employing a library written in the Java language and conforming to the Java Message Service API.

15. (Previously presented) The computer-readable medium ~~computer program product~~ of claim 13, wherein said computer readable code means comprise the following elements: a core module comprising session tasks and session command dispatchers, a client I/O module for routing commands, sending messages to a message client and receiving messages from a message client, said client I/O

module comprising command routing means and connection management means, and a cluster I/O module for routing commands, sending messages to a message manager and receiving messages from a message manager, said client I/O module comprising command routing means and channel management means.

16. (Previously presented) The computer-readable medium ~~computer program product~~ of claim 13, wherein said computer readable code means comprise configuration data, means for creating a digest of said configuration data and means for sending said digest to other client manager nodes and means for receiving a configuration data digest from other client manager nodes, as well as means for acquiring configuration data from other client manager nodes in case the digest of its configuration data and a received configuration data digest do not match.

17. (Original) A ~~computer program product~~computer-readable medium ~~comprising a computer usable medium~~ having computer readable program code means embodied therein for enabling a computer to serve as a message manager node in a server cluster, the ~~program product~~computer-readable medium comprising computer readable code means for enabling the computer to communicate with at least one client manager across a multicast communication channel, to receive message data from said client manager node, said message data comprising a destination information addressing a destination, depending on the destination information, to store said message data, to maintain a list of client subscriptions, and to compare the list of client subscriptions to available messages, and, when there is a match, for transmitting message information with a client information to a client server across said multicast communication channel.

18. (Previously presented) The ~~computer program product~~computer-readable medium of claim 17, wherein said computer readable code means comprise the following elements: a core module comprising a destination manager task, an admin manager task, a config distributor task, a reliability manager task an destination tasks, at least one destination command dispatcher, and a cluster I/O module for routing commands, sending messages to a client manager and receiving messages and requests from a client manager, said client I/O module comprising command routing means and channel management means.

19. (Previously presented) The computer-readable medium ~~computer program product~~ of claim 17, wherein said computer readable code means comprise configuration data, means for creating a digest of said configuration data and means for sending said digest to other message manager nodes and means for receiving a configuration data digest from other message manager nodes, as well as means for acquiring configuration data from other message manager nodes in case the digest of its configuration data and a received configuration data digest do not match.

20. (Canceled)

21. (Previously presented) A message system for delivering data in the form of messages between message clients, the message system being configured use at least one of queues and topics as destinations, and being configured to receive messages from message producing clients and to forward messages to message consuming clients, the system comprising:

a server cluster containing a group of client manager nodes;

each client manager node of said group of client manager nodes comprising means for connecting to clients, means for managing client connections, means for forwarding messages received from message producing clients to message manager nodes, said messages comprising destination information specifying at least one of a queue and a topic, and means for forwarding messages received from message manager nodes to message consuming clients;

the server cluster further containing a group of message manager nodes being configured differently from the client manager nodes;

each message manager node comprising means for storing and distributing messages and means for managing at least one of a queue and a topic, said messages comprising a destination information addressing a destination, said destination being at least one of a queue and a topic;

the system further comprising communication channel means for providing a multicast communication channel for forwarding messages from a plurality of said client manager nodes to a plurality of said

message manager nodes, and vice versa;

wherein at least two message manager nodes are configured to comprise identical destinations, each of which is arranged to maintain a redundant copy of a message received in the course of the same multicast transmission from a client manager to said destination, said destination being at least one of a queue and a topic.